

IN THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-2 (Canceled)

3.(Currently Amended) A method of operation of a networked device comprising the acts of:

forming a hierarchy having predetermined top level elements including a controller device type and a basic device type, and at least one further level of subsidiary device types depending from the basic device type and inheriting properties of higher level device types on which the subsidiary device type depends, but not including any further level of subsidiary device types depending from the controller device type;

transmitting from a first device to a second device a request for a simple device description message of defined length ~~from a first device to a second device~~, the simple device description message being in the form of a token-compressed message compressed from a human-readable message format;

including in the simple device description message by the second device a device type value representing a type the second device ~~in the simple device description message~~ by identifying a location of the second device within the hierarchy; and

transmitting from the second device to the first device the simple device description message including the device type value; ~~the device type value being selected from a device type hierarchy having predetermined top level elements including a controller device type and a basic device type, and at least one further level of subsidiary device types depending from the basic device type and inheriting properties of higher level device types on which the subsidiary device type depends, but not including any further level of subsidiary device types depending from the controller device type~~ and

determining by the first device that the second device is controllable by the first device based on the device type value that identifies the location of the second device within the hierarchy.

4.(Previously Presented) The method according to claim 3 further including the acts of:

establishing an address of at least one other device;

sending a simple device description query message to the at least one other device requesting a simple device description;

receiving from the at least one other device the simple device description message

of the at least one other device.

5.(Currently Amended) The method according to claim 3 ~~further~~ 4, further comprising the acts of:

sending an extended device description query message to the at least one other device requesting an extended device description from the at least one other device; and
receiving from the at least one other device an extended device description of variable length.

6.(Currently Amended) The method according to claim 3 ~~wherein~~ 4, wherein the networked device is a controller ~~device~~ having a list of device types that the controller can control.

7.(Currently Amended) The method according to claim 6 further including the act of:
determining an extent to which the controller can control the at least one other device in the list of device types that can be controlled by the controller;
wherein the determining act is performed by the act of determining a lowest level of device type that either is the device type of the at least one other device or is a higher level device type from which the device type of the at least one other device ~~depends,~~ depends.

8.(Previously Presented) The method according to claim 7 further including the acts of:

receiving a controller query message from another device including a requested device type value to request whether the controller is able to control a device of the requested device type; and

responding with a controller response message including a device type value representing the lowest level of device type in the list of device types that either is the requested device type or is a higher level device type from which the requested device type depends.

9.(Previously Presented) The method according to claim 3, comprising further comprising the act of:

receiving a simple device description query message from another device requesting a simple device description; and

transmitting to the other device the simple device description message of fixed length.

10.(Previously Presented) The method according to claim 9 wherein the predetermined top level elements in the device type hierarchy further include a composite device type, and the networked device is of the composite device type having a

functionality of an integer number of other devices, the method further comprising the act of:

responding to a received simple device description query message by sending a simple device description message including the device type value representing the device as a composite device and further an integer sub-device number being the number of other devices.

11.(Currently Amended) A system, comprising:

a plurality of networked devices each having a transceiver for sending and receiving network messages, the networked messages including device description messages identifying a device type of a networked device; wherein

each networked device has a predetermined device type selected from a device type hierarchy having predetermined top level elements including a controller device type and a basic device type, and at least one further level of subsidiary device types depending from the basic device type and inheriting properties of higher level device types on which the subsidiary device type depends, but not including any further level of subsidiary device types depending from the controller device type;

at least one of the networked devices is a controller device with a controller device type; and

at least one of the networked devices is a controlled device with a controlled device

type of the basic device type or a ~~device type~~ depending from the basic device type;

wherein the controlled device type identifies a location of the controlled device within the hierarchy, and

wherein the controller device is configured to determine that the controlled device is controllable by the controller device based on the controlled device type that identifies the location of the controlled device within the hierarchy.

12.(Previously Presented) The system according to claim 11, wherein the plurality of networked devices includes:

at least one simple device without the capability to decompress messages, the at least one simple device interpreting directly compressed simple device description query messages; and

at least one complex device including a message decompression arrangement for decompressing the messages and a message interpreter for interpreting the decompressed messages.

13.(Previously Presented) The system according to claim 11, wherein the predetermined top level elements further include a composite device type;

wherein the system includes at least one networked device of the composite device type having a functionality of a predetermined number of other devices, the predetermined

number being an integer greater than or equal to 2;

and wherein each of the at least one networked device of the composite device type responds to an incoming device query message requiring a simple device description by sending a simple device description including the device type as a composite device and a sub-device number representing the predetermined number of other devices.

14.(Currently Amended) A networked device, including:

a transceiver for sending and receiving messages; and

a message handler arranged to send or receive simple device description message of defined length, the simple device description message being in a form of a token-compressed message compressed from a human-readable message format, the simple device description message including a device type value representing a type of a further device; the device type value being selected from a device type hierarchy having predetermined top level elements including a controller device type and a basic device type, and at least one further level of subsidiary device types depending from the basic device type and inheriting properties of higher level device types on which the subsidiary device type depends, but not including any further level of subsidiary device types depending from the controller device type, wherein the device type value identifies a location of the further device within the hierarchy so that a controller having the controller device type determines that the further device is controllable by the controller based on the

device type that identifies the location of the further device within the hierarchy.

15.(Previously Presented) The networked device according to claim 14,
wherein the message handler is arranged to carry out the acts of:
establishing an address of the further device;
sending a simple device description query message to further device requesting a
simple device description;
receiving from the further device the simple device description message of fixed
length including a device type value representing a type of the further device and a field
indicating whether an extended device description is available;
and further arranged to optionally carry out the acts of:
testing the simple device description message to determine whether an extended
device description is available;
sending an extended device description query message to the further device
requesting an extended device description from the further device; and
receiving from the further device an extended device description of variable length.

16.(Previously Presented) The networked device according to claim 14 wherein the
message handler is arranged to carry out the acts of:
receiving a simple device description query message from another device requesting

a simple device description; and

sending to the other device the simple device description message of fixed length, the simple device description message being in a form of a token-compressed message compressed from a human-readable message format.

17.(Previously Presented) The networked device according to claim 16 further comprising a memory storing a predetermined simple device description message precompressed from human readable format, wherein the message handler is arranged to read the predetermined simple device description message from the memory and send it through the transceiver in response to an incoming device query message.

18.(Previously Presented) The networked device according to claim 17 wherein the networked device is a controller device comprising a memory containing a list of device types that can be controlled by the controller for determining the extent to which the networked device can control another device of known device type by determining a lowest level device type in the list of device types that can be controlled by the networked device that either is the known device type or is a higher level device type from which the known device type depends.

19.(Previously Presented) The networked device according to claim 18 wherein the

message handler is arranged to receive a controller query message from the another device including a requested device type value to request whether the controller is able to control a device of the requested device type; and to respond with a controller response message including a device type value representing the lowest level of device type in the list of device types that either is the requested device type or is a higher level device type from which the requested device type depends.

20.(Currently Amended) A computer readable medium containing a computer program defining a device type hierarchy having predetermined top level elements including a controller device type and a basic device type, and at least one further level of subsidiary device types depending from the basic device type and inheriting properties of higher level device types on which the subsidiary device type depends, but not including any further level of subsidiary device types depending from the controller device type, the computer program being arranged to cause a ~~networked~~ subsidiary device to send ~~and/or receive a simple device description messages-message~~ including the ~~a subsidiary device type selected from the device type hierarchy, wherein the subsidiary device type identifies a location of the subsidiary device within the hierarchy so that a controller having the controller device type determines that the subsidiary device is controllable by the controller based on the subsidiary device type that identifies the location of the subsidiary device within the hierarchy.~~

21.(Previously Presented) The computer readable medium containing according to claim 20 for controlling a controller-type networked device, the networked device having a transport stack and an application, the computer program comprising:

code implementing a transport adaption layer for interfacing with the transport stack;

code implementing an application programming interface for interfacing with the application; and

code implementing a messaging layer including the capabilities of sending and receiving messages in a token-encoded human readable messaging format, the code being arranged to cause the networked device:

to recognize incoming device query messages requiring a simple device description response and to provide a simple device description response including a device type of controller device type;

to respond to an incoming controller query message querying whether the networked device can control a predetermined device type by responding with the lowest level of device type in the list of device types that can be controlled by the networked device that either is the predetermined device type or is a higher level device type from which the predetermined device type depends; and

to carry out the acts of:

sending a device query message to another device;

receiving a response from the other device indicating the device type of the other device, the device type being selected from a device type hierarchy having predetermined top level elements including a controller device type and a basic device type, and at least one further level of subsidiary device types depending from the basic device type and inheriting properties of higher level device types on which the subsidiary device type depends, but not including any further level of subsidiary device types depending from the controller device type;

determining the extent to which the networked device can control the other device by determining the lowest level of device type that either is the device type of the other device or is a higher level device type from which the device type of the other device depends, in the list of device types that can be controlled by the networked device; and

controlling the other device with the functionality of the determined lowest level of device type by sending control signals selected from a list of control signals appertaining to the determined lowest level of device type.

22.(Previously Presented) The computer readable medium containing arranged to cause a networked device to carry out the method of any of claims 3 to 10.

23.(New) A method of operation of networked devices connected in a network including a controller and a controlled device, the method comprising the act of:

classifying the networked devices in a hierarchy having predetermined top level elements including a controller device type and a basic device type, and at least one further level of subsidiary device types depending from the basic device type and inheriting properties of higher level device types on which the subsidiary device type depends, but not including any further level of subsidiary device types depending from the controller device type;

transmitting from the controlled device to the controller a description message of a defined length including a device type that identifies a location of the controlled device within the hierarchy, wherein the description message further includes an identification if further information is available;

determining by the controller that the controlled device is controllable by the controller device based on the device type that identifies the location of the first device within the hierarchy.

24.(New) The method of claim 23, wherein the hierarchy does not include devices below the top level that are directly connected to the controller so that there is no hierarchy of the controller below the top level.

25.(New) The method of claim 23, further comprising the act of sending by the controller a compressed message to the controlled device, wherein the controlled device

performs the transmitting in response to the sending act without decompressing the compressed message.

26.(New) The method of claim 23, wherein the controlled device comprises a composite device including sub-devices, and wherein the description message includes a field indicating a number of the sub-devices of the composite device.

27.(New) The method of claim 26, wherein the field is included in the description message only when the controlled device comprises the sub-devices.

28.(New) The method of claim 23, wherein the description message has fixed overall length and does not contain any free text fields so that the overall length is deterministic.

29.(New) The method of claim 23, further comprising the act of requesting by the controller the further information if the identification is included in the description message.